

What is claimed is:

1. A home agent providing mobility transparent communications to a mobile node temporarily connected to a second network as a mobile destination different from a first network normally utilized, said home agent comprising:

a module receiving a new registration request from said mobile node via said second network;

a module detecting, when receiving the new registration request, that lease addresses of a DHCP server and addresses pooled beforehand are all occupied; and

a module searching for, when detecting that all the addresses are occupied, an address on the basis of self-managed information and allocating the searched address to said mobile node.

2. A home agent according to claim 1, further comprising a module temporarily pooling the address requested to be open by said mobile node without immediately returning the address to said DHCP server.

3. A home agent according to claim 2, further comprising a module allocating the temporarily pooled address to said mobile node making the new registration request.

4. A home agent according to claim 1, further comprising a module extracting an address just before time-out of a life time and allocating this extracted address to said mobile node

making the new registration request.

5 5. A home agent according to claim 4, wherein the address  
just before the time-out of the life time is extracted from a  
mobile binding list.

6. A home agent according to claim 1, further comprising  
a module administering address allocation priorities of users  
corresponding to said mobile nodes.

10 7. A home agent according to claim 6, further comprising  
a module, when the new registration request is given from said  
mobile node used by a higher priority user, extracting a lower  
priority user, stopping providing a mobile service to the  
15 extracted user, and allocating an address used by the extracted  
user to said mobile node making the new registration request.

20 8. A home agent according to claim 6, further comprising  
a module extracting, when the new registration request is given  
from said mobile node used by a higher priority user, all lower  
priority users, and stopping providing mobile services to all  
the lower priority users extracted.

25 9. A home agent according to claim 7, further comprising  
a module temporarily pooling the address used by the user stopped  
from receiving the mobile service without immediately returning  
the same address to said DHCP server.

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10. An address allocation management method providing mobility transparent communications to a mobile node temporarily connected to a second network as a mobile destination different from a first network normally utilized, said method comprising:

receiving a new registration request from said mobile node via said second network;

detecting, when receiving the new registration request, that lease addresses of a DHCP server and addresses pooled beforehand are all occupied; and

searching for, when detecting that all the addresses are occupied, an address on the basis of self-managed information and allocating the searched address to said mobile node.

11. An address allocation management method according to claim 10, further comprising temporarily pooling the address requested to be open by said mobile node without immediately returning the address to said DHCP server.

12. An address allocation management method according to claim 11, further comprising allocating the temporarily pooled address to said mobile node making the new registration request.

13. An address allocation management method according to claim 10, further comprising extracting an address just before time-out of a life time and allocating this extracted address to said mobile node making the new registration request.

14. An address allocation management method according to claim 13, wherein the address just before the time-out of the life time is extracted from a mobile binding list.

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15. An address allocation management method according to claim 10, further comprising administering address allocation priorities of users corresponding to said mobile nodes.

10 16. An address allocation management method according to claim 15, further comprising, when the new registration request is given from said mobile node used by a higher priority user, extracting a lower priority user, stopping providing a mobile service to the extracted user, and allocating an address used  
15 by the extracted user to said mobile node making the new registration request.

17. An address allocation management method according to claim 15, further comprising extracting, when the new  
20 registration request is given from said mobile node used by a higher priority user, all lower priority users, and stopping providing mobile services to all the lower priority users extracted.

25 18. An address allocation management method according to claim 16, further comprising temporarily pooling the address used by the user stopped from receiving the mobile service without

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immediately returning the same address to said DHCP server.

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